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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,701	04/09/2004	Tohru Kurata	251425US6	8739
22850 7590 05/19/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER VANCHY JR, MICHAEL J				
ART UNIT 2624		PAPER NUMBER		
NOTIFICATION DATE 05/19/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/820,701

**Applicant(s)**

KURATA, TOHRU

**Examiner**

MICHAEL VANCHY JR

**Art Unit**

2624

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, filed March 12, 2009, with respect to the rejection(s) of claim(s) 1 and 3 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chinthammit, 2004/0080467 A1.

1. Claim 3 has been canceled.
2. Claims 16 and 17 have been added.
3. The rejection to claim 8 regarding 35 U.S.C. 101 has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**3. Claims 1, 2, 7-9, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe, US 2002/0118339 A1 and further in view of Chinthammit, 2004/0080467 A1.**

**Regarding claim 1**, Lowe teaches an image display device, comprising: image pick-up means for picking up an image; image display means for displaying an image; detection means for detecting a position of the eyes of a face relative to the image display means by image recognition from an image picked-up by said image pick-up means; and display position alteration means for altering a position of a location of an image displayed by said image display means so as to move the location of the image proportional to a movement of the eyes to follow the position of the eyes, based on the detection result of said detection means (Fig. 1, [0005]).

The Examiner takes into account that Lowe uses eye trackers for monitoring eye motion of the user (Abstract) however, Lowe does not explicitly describe what type of eye detectors are being used. The eye detectors in Chinthammit do use eye position trackers (Abstract) that use IR light and visual light, but can be adapted to also use a camera that has a higher frame rate than the visual display ([0061]). Chinthammit also uses a Kalman filter (interpolation filter) for eye tracking information to estimate eye position into a future time at which the next display image frame is scanned (displayed) on the viewer's eye ([0029] and [0054]). The Examiner takes into account that within Chinthammit that the image to be displayed is scanned onto the user's eye which is a form of displaying. In this case modifying Lowe to include the eye detecting means in Chinthammit along with the Kalman filter for display estimation, it would be clear to one of ordinary skill in the art that even though the image in Lowe is not being scanned onto a user's eye, that the image is being displayed in the future based upon the user's eye movement taken by image detection means

**Regarding claim 2**, Chinthammit teaches said algorithm is a digital interpolation filter which estimates the position of the location of the displayed image in sub-pixel units (Abstract, [0029] and [0054]).

**Regarding claim 7**, Chinthammit teaches using a CMOS sensor ([0061]).

**Regarding claim 8**, see rejection made to claims 1 and 2, as it addresses the rejection to the image display device for preventing blurring of this method, since the estimation is used for preventing blurring.

**Regarding claim 9**, see the rejection made to claim 1 for it encompasses all the limitations for this claim.

**Regarding claims 16 and 17** see the rejection made to claim 2, for it addresses all the limitations within these claims.

**4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe, US 2002/0118339 A1 and Chinthammit, 2004/0080467 A1, and further in view of Nasserbakht et al., 6,072,443.**

Regarding claim 4, Lowe and Chinthammit, do not explicitly teach a distance measurement means and image enlargement and reduction based upon said distance measurement. However, Nasserbakht does:

**Regarding claim 4**, the image display device according to claim 2 or 3, further comprising: distance measurement means to measure the distance with an external object, wherein said digital interpolation filter also performs image enlargement and reduction processing based on the results of measurement of said distance measurement means (Fig.6 and col. 2 line 66 to col. 3 line 4).

Modifying Lowe and Chinthammit, to include a distance measurement and image enlargement/reduction capabilities increases the picture clarity. Therefore, it would be clear to one of ordinary skill in the art at the time of the invention to modify Lowe and Harradine et al., to include a distance measurement and image enlargement/reduction capabilities to increases the picture clarity.

**Regarding claim 5 Nasserbakht teaches:** the image display device according to claim 1, wherein said display position alteration means is a damping device which causes physical movement of said image display means (col. 6, lines 10-18).

**5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe, US 2002/0118339 A1, Chinthammit, 2004/0080467 A1, and further in view of Mølgaard, US 6,747,690 B2.**

Modifying Lowe and Chinthammit, to include acceleration measurement would decrease the probability of a blurred image being displayed. Therefore, it would be clear to one of ordinary skill in the art at the time of the invention to modify Lowe, to include an acceleration measurement to increase the clarity of the display and further limit blurring.

**Regarding claim 6 Mølgaard teaches,** the image display device according to claim 1, further comprising: acceleration measurement means for measuring the acceleration of said image display device unit, wherein said display position alteration means alters the position of image display by said image display means based on the detection results of said detection means and the measurement results of said acceleration measurement means (col. 3, lines 54-61).

**6. Claims 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe, US 2002/0118339 A1, Chinthammit, 2004/0080467 A1, and further in view of Hanna et al., US 6,714,665 B1.**

Regarding claim 10, neither Lowe nor Chinthammit explicitly teach using a low-resolution template of a face model for eye position detection. However, it would be clear to one of ordinary skill in the art to modify Lowe to include a low-resolution template for increased speed in determining the position of the eyes of the user.

**Regarding claim 10**, Hanna et al. teaches: detection means detects the position of the eyes of the face by using a low-resolution template of a model face and by matching the low resolution template within a search area of the picked-up image (col. 39, lines 43-53).

**Regarding claim 11**, see the rejection made to claim 10 for it encompasses all the limitations for this claim.

**Regarding claim 12**, see the rejection made to claim 10 for it encompasses all the limitations for this claim.

**Regarding claim 13**, Hanna et al. teaches: the search area is in a center and towards a top of the picked-up image (Fig. 1a and Fig. 1c).

**Regarding claim 14**, see the rejection made to claim 10 for it encompasses all the limitations for this claim.

**Regarding claim 15**, see the rejection made to claim 10 for it encompasses all the limitations for this claim.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL VANCHY JR whose telephone number is (571)270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 2624



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